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Abstract:

Critical care psychosis is a condition which occurs in critical care settings. Any client admitted into the coronary care unit (CCU) or intensive care unit (ICU) is at risk for the development of this psychosis. The process often progresses from mild to gross disorientation. Elderly clients are particularly susceptible to this condition for a variety of reasons. The care and treatment provided in order to maintain equilibrium are the iatrogenic factors that are most responsible for the development of this potentially life-threatening condition. The health care goal is to prevent critical care psychosis from occurring.

Admission to a critical care setting can be a traumatic experience for clients. Environmental factors such as sleep deprivation and sensory overload can lead to a common iatrogenic complication called critical care psychosis. An iatrogenic disorder results from the treatment provided by hospital personnel or procedures, or through exposure to the environment of a health care facility (Mobily & Kelly, 1991). Physiological and psychological factors also play a part in the development of critical care psychosis. Although confusion is a symptom of psychosis, impaired cognitive functioning is common to both (Fisher & Moxham, 1984; Tess, 1991). A psychotic or acute confusional state can occur in any hospital setting; however, it is more often seen in critical care settings (McBride, 1992). The elderly client is particularly susceptible to this phenomenon for a variety of physical and psychological reasons (Kick, 1989; Weinrich, Boyd, & Nussbaum, 1989; Thomasma, Yeaworth, & McCabe, 1990). In this paper, the iatrogenesis of critical care psychosis in the elderly is discussed. Particular emphasis is placed on several causative factors, recommended interventions, and nursing education.

Iatrogenic nursing: Critical care psychosis in the elderly client

Relevance to nursing practice

Critical care psychosis has many implications for current nursing practice; three issues are of particular importance. The first issue deals with the increasing number of elderly clients seen in hospital as a result of advanced medical technology and extended life expectancy. Prevost, Wilson and Gerber (1991), and Kroeger (1991) write that 60 to 70 per cent of acute care beds and 30 per cent of intensive care unit (ICU) beds are filled by elderly patients. Due to the growing number of elderly clients in the critical care setting, it is anticipated that without preventative measures aimed at reducing the causative factors, the number of cases of critical care psychosis will increase. The incidence of this iatrogenic state ranges from 24 to 72 per cent of all patients admitted to the critical care setting (Kloosterman, 1991). There is no consensus in the literature on the incidence of critical care psychosis specifically in the elderly client, although some studies have found age to be a statistically significant factor affecting confusion (Tess, 1991).

The second issue deals with the dangerous reactions associated with these clients during their psychotic state. Fisher and Moxham (1984) indicate these reactions are reversible. Other research reveals that the acutely confused critical care client has a higher mortality rate (Kroeger, 1991). Death in the confused could be a result of disconnected life-saving intravenous infusions, self-extubation, dislodged invasive catheters leading to lethal dysrhythmias, respiratory arrest, hypoxia, exsanguination or arterial embolization (Tess, 1991). The elderly client is particularly susceptible to critical care psychosis because of several age-related factors such as visual and hearing impairment, and the higher incidence of disease (Tess, 1991). The behaviour exhibited by psychotic elderly clients can be potentially life-threatening; therefore prevention should be of extreme importance to critical care nurses.

The third and possibly most important issue in current practice deals with the

iatrogenesis of critical care psychosis. The treatment administered to clients to sustain life is often one of the major contributing factors in the development of this psychosis (Fisher & Moxham, 1984). Certain environmental factors such as sensory and sleep deprivation are some of the many causes of this confusional state (Hall, 1988; McBride, 1992; Tess, 1991). There are many other factors which contribute to the development of critical care psychosis. These factors will be divided into three groups; physiological, psychological and environmental.

Physiological factors

Many physiological factors can play a part in the development of critical care psychosis. For example, after a myocardial infarction, the cardiovascular and pulmonary systems are often compromised in an attempt to compensate for the death of part of the heart. Anoxia of the brain may develop, leading to critical care psychosis (Guyton, 1987). Other physical factors such as pain, altered metabolic and endocrine functioning, and altered nutritional status also contribute to the development of a psychosis by disrupting the body's normal functioning (Foremen, 1986; Tess 1991). Isaacson, Walker, Hayes, Legg, and Yelvington (1992), suggest that clients who have cardiac surgery and develop "post-pump psychosis" will do so several days post-operatively, when metabolic processes altered by surgery return to normal. The symptoms are characterized "as first a perceptual distortion followed by mild disorientation progressing often to vivid hallucinations, paranoid delusions and then gross disorientation" (Tess, 1991, p.399). From the authors' experience, many elderly clients have been observed to develop psychosis even without having had cardiac surgery.

As well as the pathophysiological changes occurring as a result of their illness, elderly clients experience changes due to the aging process which make them more susceptible to this psychosis. Neurologically, there is potential for alterations in thought processes because of slowed cognitive functioning, a decrease in short-term memory, a decreased ability to concentrate, and an in-

crease in reaction time (Kick, 1989; Weinrich, Boyd, & Nussbaum, 1989). The elderly may have multiple medical problems as well as complex pharmacological treatments, all of which may contribute to the development of a psychosis. Therefore, the elderly client admitted to the critical care setting is more likely to develop an acute confusional state than a younger client because of the physiological changes associated with the aging process (Kroeger, 1991; McBride 1992).

Psychological factors

Another category which makes the elderly client more susceptible to the development of critical care psychosis is the cluster of psychological factors. First, there are many similarities among clients of all ages who are admitted to a critical care setting. Stress is common to all, and may result from fear of the unknown, the anxiety of pain, and fear of death and dying. When a client's ability to cope with stress is exceeded, the individual may no longer be able to adapt, and breakdown of resistance or death may occur (Thomasma et al, 1990).

Relocation is another psychological stressor to which the elderly are particularly susceptible. The Holmes and Rahe's Social Readjustment Rating Scale was developed in order to assign a numerical value to commonly occurring stressors (Fisher & Moxham, 1984). The elderly ranked changes in living conditions and residence as requiring significantly higher levels of adjustment than a younger group (Thomasma et al, 1990). Moving from a permanent residence to a critical care setting is very stressful for the elderly because it means a sudden loss of possessions, privacy and freedom (Thomasma et al, 1990). Especially at risk are clients who do not speak English. These clients not only have to deal with relocation, but also the inability to communicate with health care workers. Psychological stressors in the critical care setting are numerous and significantly contribute to the development of critical care psychosis.

Environmental Factors

A client's coping strategies will determine his or her physical and psychological responses to the critical care setting. However, the authors believe that environmental factors are most responsible for the iatrogenesis of critical care psychosis.

Most of the literature describes environmental factors such as sleep deprivation, sensory overload and deprivation, immobility, and unfamiliarity with the environment as major contributors to the iatrogenesis of critical care psychosis (Belitz, 1983; Hodgson, 1991; Topf, 1992). Perhaps the most funda-

mental of the above mentioned factors is sleep deprivation (Fisher & Moxham, 1984). Sleep deprivation may occur because of internal and external stressors. Internal stressors would include fear, stress or pain. One external factor is the noise level in critical care settings. Recent studies indicate that the noise levels in critical care decrease sleep efficiency and the ability to fall and stay asleep becomes more difficult (Topf, 1992). Passing from one stage of sleep to the next becomes more difficult, ultimately leading to sleep deprivation (Baker, 1992; Topf, 1992).

Other external stressors affecting sleep are monitoring vital signs, checking equipment and giving treatments. A person who does not sleep for even brief periods over a 24 to 48 hour time span will develop psychological changes such as irritability, aggressiveness, anxiety, suspicion and disorientation (Belitz, 1983; Hodgson, 1991). The elderly are particularly vulnerable to sleep deprivation because of the previously described physical changes and the effects related to relocation.

In CCU, clients are encouraged to rest or sleep in the afternoon to allow the heart to rest. However, this practice is not recommended by two authors because it interrupts and confuses the circadian cycle (Baker, 1992; Hodgson, 1991). The encouragement of a sleep in the afternoon should be used judiciously, especially if the client is elderly with difficulty sleeping at night.

Two other environmental factors responsible for critical care psychosis are sensory deprivation and overload. Sensory deprivation has been defined as a "reduction in the amount and intensity of meaningful stimuli" (Belitz, 1983, p. 42). A study by Topf (1992) indicates that critical care settings are areas that deprive clients of much-needed sensory input. The health care team restricts the clients' visitors, television and activity, therefore providing little variation to the clients' environment. As well, clients may feel isolated as a result of separation from their familiar environment. Clients of various ethnic background may be more prone to the effects of sensory deprivation, especially if they cannot communicate with staff.

Sensory overload has been defined as "highly intense stimulation that is not patterned or meaningful" (Belitz, 1983, p. 42). The critical care setting provides the client with an overabundance of constant sounds, sights and unfamiliar faces. The result is a barrage of sensory input occurring at a time when the client's physical resistance and emotional resilience are already diminished (Baker, 1992).

The environmental factors combined with the physiological and psychological factors all place the elderly critically ill client at risk for the development of

critical care psychosis. Knowing the causes of this "psychosis" enables nurses to provide preventative interventions for those clients at high risk. The most important health goal is prevention.

Interventions to prevent critical care psychosis

Particularly for the elderly client, critical care nurses need to diminish the effects of relocation and minimize the risk of disorientation. It is vital that the family be included in the care of the client. From experience, the authors note that families often feel threatened by the critical care setting and that there is little they can do to help the client. It is imperative for nurses to educate families about the role they can play in helping maintain the elderly client's routine and orientation; for example, the family can bring in personal mementos, calendars and clocks. According to Chatham (1978), designating a family member to orientate the critical care client to their environment is beneficial in improving the client's orientation, appropriateness, confusion, delusions and sleep. An improvement was observed when a family member used touch and orientation to time, place and person. Nurses must also recognize clients' spoken and unspoken concerns about how they are affected by their new location and encourage them to verbalize any feelings.

To prevent sleep deprivation, nurses should waken the client only when needed, and if possible, time vital signs, medication, and other interventions at the beginning and end of the night shift (Tess, 1991). This recommendation is possible only for those clients whose conditions are stable (i.e. stable vital signs, neurological signs, etc.). The simple interventions of dimming lights, closing doors, turning down alarms and reducing other monotonous noises, can all help the client achieve a more normal cycle of sleep, thus reducing the possibility of psychosis. Additionally, explaining the purposes of equipment and treatments to clients in simple terms may help prevent sensory overload.

There are a number of techniques nurses can use to prevent sensory deprivation. The authors feel that the best stimulation and comfort for the elderly, critical care client comes from interaction with family and the health care team. Communicating with these clients using terms they will understand may keep stress levels low and prevent psychosis. Nurses should also consider encouraging a family member to be with the elderly client as much as possible without physiologically compromising the client. This is especially important with the client who does not speak the language of the

caregiver, or is prone to the effects of relocation. The Scarborough Grace Hospital's CCU is redesigning its visiting policy in order to acknowledge the added stress certain clients go through because of language and cultural differences. With clients who are at high risk for developing critical care psychosis, it is often encouraged that a family member stay during the nights, especially if the client has just been admitted. It often eases some of the stress for both the clients and their families. Also, the occurrence of critical care psychosis appears to be avoided in many of these clients. Perhaps this is an area to study in regard to the prevention of critical care psychosis.

Nursing education

The interventions discussed thus far have involved the client and family. The authors believe that education of nurses through hospital in-services is essential. Research has shown that reduced cognitive capacity often goes undetected by nursing assessment techniques (Tess, 1991). Early detection of a reduced level of cognitive functioning may prevent critical care psychosis from developing (Kroeger, 1991). The authors agree with Tess (1991), that formal cognitive testing needs to be implemented at regular intervals, especially for elderly clients. Even intubated clients can be cognitively tested with simple "yes/no" response questions, or the use of a writing tool.

Since alterations in cognitive functioning lead to critical care psychosis (Fisher & Moxham, 1984; Tess, 1991),

testing the client's cognitive capacity is essential. If formal cognitive testing can be implemented regularly, an elderly client whose cognitive function is diminishing may have the benefit of early and expedient interventions (such as those mentioned earlier) to correct the impending psychosis (Tess, 1991). A standardized cognitive testing instrument needs to be developed and taught to nurses.

The elderly critical care client, with numerous medications and intravenous drips, who suddenly becomes confused, should be suspected as having an organic cause for the confusion (Kroeger, 1991). However, a study by Kroeger (1991) indicated that there was a tendency for critical care nurses to diagnose critical care psychosis first, rather than rule out organic causes for the psychosis. Kroeger (1991) concluded that decisions about the treatment of psychosis in the elderly client are influenced by nurses' professional and personal experiences (with confused elderly clients) as well as their personal attitudes and beliefs regarding the psychotic state. It is important for nurses to be educated holistically with regard to confusional states in the elderly. Instead of looking for either non-organic (environmental) or organic causes, a complete assessment is required.

From experience, the authors note that although many of the interventions to prevent critical care psychosis are basic, the occasional reminder through nursing in-services is needed. Nurses also need to be instructed on the effects of relocation on elderly clients (Thomasma et al, 1990).

Clients will benefit from a more knowledgeable health care team; although, the benefits of this type of nursing in-service need to be studied.

Conclusions

Critical care psychosis, to which elderly clients are particularly prone, is an iatrogenic complication occurring because of various physiological, psychological and environmental factors. Measures to prevent critical care psychosis are directed at the health care team, clients and families. Open communication, especially with clients, is essential for stimulation, as well as to help diminish anxiety and stress. Continuing education is also an essential element in the prevention of this iatrogenic complication. Nurses need opportunities to explore their beliefs and feeling about confusion in elderly clients. Using cognitive testing tools, and assessing clients beyond organic causes will help prevent critical care psychosis. Ongoing assessments and cognitive testing will make nurses better able to anticipate the development of this iatrogenic state in the elderly client. If a psychotic state develops despite preventative measures, correction of the problem would again be aimed at the client and their family; however, this topic is beyond the scope of this paper. ❀

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